REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention.

Claims 1-22 and 24-31 remain in the application. Claims 14, 15, 21, 24 and 26 have been amended. Claims 6-8, 16, 17, 23, 24, 29 and 30 have been indicated as including allowable subject matter. Claim 21 has been rewritten to include the features of claim 23 (now cancelled). Claim 24 has been rewritten in independent form.

The Invention

A method of inspecting a workpiece during a production run in which workpieces are supplied to workstations by an autoloader. In accordance with the method, the supply of the workpieces by the autoloader is performed in accordance with a supply control routine. When it is desired to inspect a workpiece in a workstation, the supply control routine is interrupted after its then current cycle and the autoloader is used to move the workpiece to a quality control station. The supply of the workpieces in accordance with the supply control routine is then resumed. While the autoloader is operating in accordance with the supply control routine, the workpiece is inspected. If the workpiece is acceptable, the supply control routine is again interrupted after its then current cycle and the autoloader is used to move the workpiece to an output area. The supply of the workpieces in accordance with the

supply control routine is then resumed again.

The References of Record

U.S. Patent 6,502,294 to Kusmierczyk et al. (hereinafter Kusmierczyk) is directed to a transfer line workpiece inspection apparatus and method. The apparatus includes a plurality of different kinds of machining units disposed at respective machining stations along a transfer path. A workpiece transporter moves workpieces along the transfer path to position each of the workpieces at each of the machining stations and allows each of the machining units to machine each of the workpieces as the workpieces move along the transfer path. A controller connected to the machining units responds to an inspection command by causing all machining units downstream from a designated machining unit along the transfer path to allow a workpiece selected for inspection to pass by without being machined by the downstream units.

U.S. Patent 6,324,749 to Katsuura et al. (hereinafter Katsuura) is directed to a vehicle assembly line including a series of function zones (wiring zone, interior equipment, exterior equipment, etc.). Inspection and repair are conducted in inspection sections and repair sections individually attached to individual functional zones. Since inspection and repair can be finished within each functional zone, defects can be quickly found and quality in each zone can be guaranteed to thereby improve assembly line production efficiency.

U.S. Patent 5,193,662 to McCulloch et al. (hereinafter McCulloch) is directed to a guide structure for a lift and carry conveyor system. The system uses fixed guide rails which guide lower portions of a part as the part moves between

sequential conveyor sections. The guide rails ensure that the part continues to be properly guided as it moves between the sequential stations, or between a workstation and a conveyor section.

The Rejections under §102

Claims 1, 11 and 13 stand rejected as being anticipated by Kusmierczyk. For the following reasons, the Examiner's rejection is traversed.

The Kusmierczyk reference does not disclose a method of inspecting workpieces wherein a control routine is performed that controls the movement of workpieces to and from workstations, and includes the step of inspecting a selected workpiece and "if the selected workpiece is acceptable, generating a second signal indicating that the *selected workpiece is ready to be transported* to an output area " as required (italics added). Rather, Kusmierczyk discloses a method of inspection where after receiving an inspection command, the workpiece is passed to an inspection station at the end of an assembly line and inspected. After inspection, the workpiece is moved to the beginning of the assembly line (what the Examiner refers to as the output area) and only after (not before) placement at this area does the assembly line operator again signal the assembly line to perform an action (in Kusmierczyk the operator signals to skip work stations where machining operations have already been performed). Thus, the operator of Kusmierczyk does not disclose generating a second signal that a selected workpiece *is ready* to be transported to an output area. Reconsideration and withdrawal of the rejection of claim 1 is respectfully requested.

Claims 11 and 13 depend directly from claim 1 which is allowable for the

reasons stated above. Reconsideration and withdrawal of the rejection of claims 11 and 13 is respectfully requested.

The Rejections under §103

Claims 2-5, and 9-10 stand rejected as being unpatentable over Kusmierczyk in view of Katsuura.

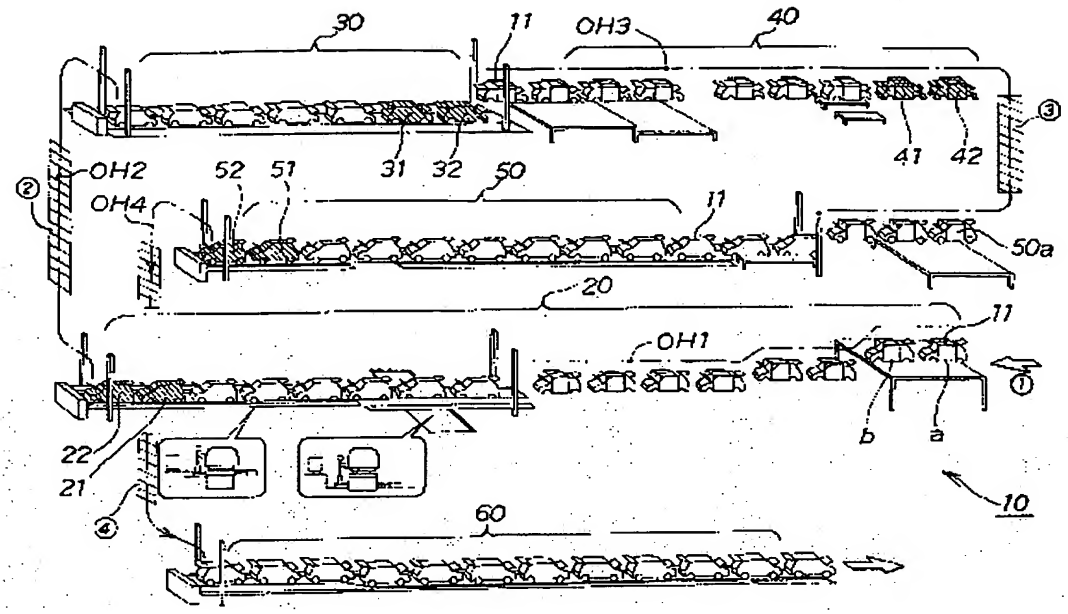
Regarding claim 2, even if the references were combined in the manner proposed by the Examiner, the claimed invention would not result. The combination does not teach the feature of step (j.), namely moving a selected workpiece from a quality control station to a desired one of a plurality of workstations (workstations introduced in claim 1). Rather, Kusmierczyk teaches removing a selected workpiece from the end of an assembly line and then after inspection, returning the selected workpiece only to the beginning of the assembly line. There is no option to select a desired workstation from amongst a series of workstations and return the workpiece to the desired workstation. Katsuura does nothing to remedy the deficiencies of Kusmierczyk. Rather, Katsuura teaches transporting a workpiece from an inspection station to an adjacent repair station. However, the repair station is the only station to which the workpiece can be moved, thus, there is no capability to select from "a plurality" of workstations. Thus, neither Kusmierczyk, Katsuura, nor a combination thereof teach or suggest a step of moving a selected workpiece from a quality control station to a desired one of a plurality of workstations. Reconsideration and withdrawal of the rejection of claim 2 is respectfully requested.

Claim 3 depends directly from claim 2 which is allowable for the reasons stated above. Reconsideration and withdrawal of the rejection of claim 3 is

respectfully requested.

Regarding claims 4 and 5, even if the references were combined in the manner proposed by the Examiner, the present invention would not result. The combination does not teach or suggest a step of informing a control routine that workpieces should not be delivered to a selected workstation, as required. Rather Kusmierczyk teaches delivering workpieces sequentially to all workstations on an assembly line, but simply passing through selected workstations without performing machining, (or another operation) on the workpiece when inspection at the end of the assembly line is desired. Katsuura does nothing to remedy the deficiencies of Kusmierczyk. Katsuura teaches multiple inspection and repair stations (e.g. 51, 52) within an assembly line (see Fig. 4 reproduced below). However, Katsuura does not teach or suggest not delivering workpieces to selected workstations. Much like Kusmierczyk, the workpieces are delivered to and pass through all of the sections and workstations of the assembly line, though in not every section does an operation take place (i.e. of no repair is required, no operation occurs within the repair station). Thus, neither Kusmierczyk, Katsuura, nor the combination thereof teach or suggest a method including a step of informing a control routine that workpieces should not be delivered to a selected workstation. Reconsideration and withdrawal of the rejection of claims 4 and 5 is respectfully requested.

FIG. 4



Claims 9 and 10 depend directly from claim 1 which is allowable for the reasons stated above. Reconsideration and withdrawal of the rejection of claims 9 and 10 is respectfully requested.

Claims 12, 14 and 21 stand rejected as being unpatentable over Kusmierczyk in view of McCulloch. For the following reasons, the Examiner's rejection is traversed.

Claim 12 depends directly from claim 1. Even if the references were combined as proposed by the Examiner, the claimed invention would not result. As previously stated, Kusmierczyk does not disclose a method of inspecting workpieces wherein a control routine is performed that controls the movement of workpieces to and from workstations, and includes the step of inspecting a selected workpiece and "if the selected workpiece is acceptable, generating a second signal indicating that the *selected workpiece is ready to be transported* to an output area " as required

(italics added). Rather, Kusmierczyk discloses a method of inspection where after receiving an inspection command, the workpiece is passed to an inspection station at the end of an assembly line and inspected. After inspection, the workpiece is moved to the beginning of the assembly line (what the Examiner refers to as the output area) and only after (not before) placement at this area does the assembly line operator again signal the assembly line to perform an action (in Kusmierczyk the operator signals to skip work stations where machining operations have already been performed). Thus, the operator of Kusmierczyk does not disclose generating a second signal that a selected workpiece *is ready* to be transported to an output area. McCulloch does nothing to cure the deficiencies of Kusmierczyk. McCulloch teaches a lift and carry conveyor system with an improved structure, but teaches noting regarding transfer methods, especially methods including an inspection process. Thus, neither Kusmierczyk, McCulloch, nor the combination thereof teach or suggest generating a second signal that a selected workpiece *is ready* to be transported to an output area as required by claim 12. Reconsideration and withdrawal of the rejection of claim 12 is requested.

Claim 14 has been amended to further distinguish over the prior art. Claim 14 more particularly describes the function of an autoloader, which can transport parts directly from location to location, for example from a workstation to a quality control station. Even if the references were combined in the manner proposed by the Examiner, the claimed invention would not result. The proposed combination does not teach or suggest moving a first workpiece from a first workstation directly to a quality control station using an autoloader and moving a second workpiece from an input area directly to a second workstation using an autoloader, as required. Rather,

Kusmierczyk teaches manually moving a workpiece to an area for inspection, only after the workpiece has passed through the remaining workstations on an assembly line. Further, Kusmierczyk does not teach or suggest the direct movement of workpieces from an input area to a second workstation. Kusmierczyk only teaches the sequential movement of workpieces from an input area to first workstation, first workstation to a second workstation, etc. McCulloch does nothing to cure the deficiencies of Kusmierczyk. McCulloch teaches a lift and carry conveyor system with an improved structure, but teaches nothing regarding transfer methods, especially methods including an inspection process. Thus, neither Kusmierczyk, McCulloch, nor the combination thereof teaches all of the features of claim 14. Reconsideration and withdrawal of the rejection of claim 14 is respectfully requested.

Claim 21 has been amended to include the features of dependent claim 23 which has been indicated as including allowable subject matter.

Claims 15, 18-20, 22, 25-28 and 31 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kusmierczyk and McCulloch further in view of Katsuura. For the following reasons, the Examiner's rejection is traversed

Claim 15 depends directly from claim 14. Even if the references were combined as proposed by the Examiner, the claimed invention would not result.

The proposed combination does not teach or suggest moving a first workpiece from a first workstation directly to a quality control station using an auto loader and moving a second workpiece from an input area directly to a second workstation using an autoloader, as required. Rather, Kusmierczyk teaches manually moving a workpiece to an area for inspection and only after the workpiece has passed through the remaining workstations on an assembly line. Further,

Kusmierczyk does not teach or suggest the direct movement of workpieces from an input area to a second workstation. Kusmierczyk only teaches the sequential movement of workpieces from an input area to first workstation, first workstation to a second workstation, etc. McCulloch does nothing to cure the deficiencies of Kusmierczyk. McCulloch teaches a lift and carry conveyor system with an improved structure, but teaches nothing regarding transfer methods, especially methods including an inspection process. Katsuura does not cure all of the deficiencies of Kusmierczyk and McCulloch. Katsuura teaches sequential movement of workpieces along an assembly line, but not movement from an input area directly to a second workstation. Thus, neither Kusmierczyk, McCulloch, Katsuura nor the combination thereof teaches all of the features of claim 15. Reconsideration and withdrawal of the rejection of claim 15 is respectfully requested.

Claims 18-20 depend directly from claim 14. As described above, the combination proposed by the Examiner does not teach or suggest both moving a first workpiece from a first workstation directly to a quality control station using an autoloader and moving a second workpiece from an input area directly to a second workstation using an autoloader, as required by claim 14 and the claims that depend therefrom. Thus, reconsideration and withdrawal of the rejection of claims 18-20 is respectfully requested.

Claims 22 and 25 depend directly from amended claim 21, which includes allowable subject matter.

Claim 26 has been amended to further distinguish over the prior art. Claim 26 more particularly describes the function of an autoloader, which can transport parts directly from location to location, for example from a workstation to a quality control

station. Even if the references were combined in the manner proposed by the Examiner, the claimed invention would not result. The proposed combination does not teach or suggest moving a first workpiece from a first workstation directly to a quality control station using an autoloader and moving the selected workpiece from the quality control station directly to an output area using an autoloader and moving the selected workpiece from the output area directly to a second input area in a second zone, as required. Rather, Kusmierczyk discloses a method of inspection where after receiving an inspection command, the workpiece is passed through a series of workstations to an inspection station at the end of an assembly line and inspected. Katsuura teaches only movement of a workpiece from a first section to a second section through both an inspection station and a repair station. McCulloch does nothing to cure the deficiencies of Kusmierczyk and Katsuura. McCulloch teaches a lift and carry conveyor system with an improved structure, but teaches noting regarding transfer methods. Neither of the cited references, alone or in combination, teach direct movement from a first workstation to an quality control station and then to a second input area in a second zone. Neither of the cited references teach the function of the claimed autoloader. Thus, reconsideration and withdrawal of the rejection of claim 26 is respectfully requested.

Claims 27, 28 and 31 depend directly from claim 26 which is believed to be allowable for the reasons stated above. Reconsideration and withdrawal of the rejection of claim 27, 28 and 31 is respectfully requested.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is

invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. HON-14853.

Respectfully submitted,

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